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Developmental Impacts of the Dallas Area Rapid Transit Light Rail System

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Dallas Area Rapid Transit

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Table of Contents

List of Tables & Figures	ii
Executive Summary	iii
Introduction.....	1
Methodology	1
Assessing Existing Development	1
Future Developmental Impacts.....	2
Lease Rate Analysis.....	3
Findings.....	4
Existing Developmental Impacts	4
Future Developmental Impacts.....	11
Premium on Office Lease Rates	12
Conclusions.....	14

List of Tables & Figures

Tables

Table ES1. Estimated 2013 Property Values and Tax Contributions.....	iii
Table ES2. Average Lease Rates and Premiums, 2003 – 2013	iv
Table 1. Total Appraised Value of New Property Development.....	5
Table 2. Total Appraised Value of Development by Property Type, between DART and Control Groups	6
Table 3. Estimated 2013 Property Values and Tax Contributions.....	10
Table 4. Average Lease Rates and Premiums, 2003 - 2013	13
Table 5. Regression Analysis of Office Lease Rates	14

Figures

Figure 1. Xceligent Office Space Market Areas for Dallas-Fort Worth, Texas	4
Figure 2. Cumulative Value of Multi-Family Development, 1993-2013	7
Figure 3. Cumulative Value of Office Development, 1993-2013	8
Figure 4. Cumulative Value of Retail Development, 1993-2013	9
Figure 5. Cumulative Value of Single-Family Development, 1993-2013.....	10
Figure 6. Trammell Crow Company/High Street Residential’s “Union at Carrollton Square” Multi-family Development near Downtown Carrollton Station.	11
Figure 7. Rendering of State Farm Development at Bush Turnpike Station	12
Figure 8. Average Lease Trends, Plus E Leases 2003-2013 (0.25 Mile)	13

Executive Summary

The Dallas Area Rapid Transit (DART) Light Rail System opened in 1996, starting the rapid expansion of light rail in the Dallas-Fort Worth area. Since that time, the system has expanded into one of the longest light rail systems in the country. In previous studies we found that light rail services catalyze property development and that close proximity to a light rail station boosts property values. We have found that existing and planned development occurring near DART Rail stations totals more than \$5.3 billion since the opening of the initial portions of rail service and has considerably outpaced development in comparable locations even through the recession of 2008-2009. In the following, we update and expand our previous research to not only consider the impacts of DART's light rail system on property development, but also on commercial property lease rates. Key findings of our updated analyses include:

- New developments occurring within 0.25 miles of a DART station since just before the opening of the starter system in 1996, through early 2013 totaled more than \$1.5 billion in valuation, compared to roughly \$600 million in comparable control areas – a difference of \$932 million (see Table ES1).
- Between 1993 and 2013 more than \$751 million in multi-family residential property development occurred within 0.25 miles of DART stations. In the same time period, the development of office and retail properties totaled \$224 and \$393 million, respectively. DART station areas outperformed development occurring in control group areas in each of the five property types investigated in our report.

Table ES1. Estimated 2013 Property Values and Tax Contributions

Property Type	Est. Value of All Properties		Est. Tax Contributions		Tax Differential
	DART	Control	DART	Control	
Industrial	\$23,473,050	\$19,481,050	\$556,311	\$461,701	\$94,610
Multi-Family	\$751,646,900	\$169,555,466	\$17,814,032	\$4,018,465	\$13,795,567
Office	\$224,798,649	\$45,121,010	\$5,327,728	\$1,069,368	\$4,258,360
Retail	\$393,286,515	\$300,039,538	\$9,320,890	\$7,110,937	\$2,209,953
Single Family	\$140,960,100	\$67,550,410	\$3,340,754	\$1,600,945	\$1,739,810
Total	\$1,534,165,214	\$601,747,474	\$36,359,716	\$14,261,415	\$22,098,300

Note: Estimated tax contributions are calculated using a regional average of local taxes for 2013.

- Estimated tax contributions for new development occurring near DART stations exceed \$36 million annually, which is more than twice the \$14 million estimated in the control group areas.
- Using data from the Xceligent, Inc.,® real estate market database, offices located within 0.25 miles of the DART Rail System (stations opened between 1996 and 2002) command higher rental rates. On average, a 13.9% premium exists on lease rates for these offices. As seen in Table ES2, this lease premium held through the recession and recovery periods. Based on an advanced statistical analysis of the data, the transit-oriented development (TOD) premium holds when market factors such as building class and age are held constant.

Table ES2. Average Lease Rates and Premiums, 2003 – 2013

Year	Average Market Area Rate	Average Weighted TOD Premium	Weighted Average Premium
2003	\$15.86	\$1.03	6.5%
2004	\$15.76	\$1.11	7.0%
2005	\$16.13	\$1.58	9.8%
2006	\$16.44	\$2.39	14.5%
2007	\$16.84	\$2.94	17.5%
2008	\$17.58	\$2.71	15.4%
2009	\$17.47	\$3.24	18.5%
2010	\$16.98	\$3.33	19.6%
2011	\$16.83	\$2.68	15.9%
2012	\$16.66	\$2.31	13.9%
2013	\$16.42	\$2.36	14.4%

Note: Dollar values are per square foot.

- Upcoming projects near DART Rail stations amount to an estimated \$3.9 billion in announced values, roughly \$3.8 billion of which can be attributed to the presence of DART Rail. Of this \$3.8 billion, a certain number of developments overlap with the number provided in our 2007 report. Some projects were changed considerably, or removed from discussion altogether, and several new projects emerged that were not included in the 2007 report. In the current report, our estimate of \$3.8 billion in development attributable to DART is a moving estimate and will be periodically updated as more information becomes available or new projects are announced. Once completed, these developments will contribute about \$91 million in annual real property tax revenues to local jurisdictions.
- Almost all major projects planned or under construction near DART Rail stations have some residential component, most of which are multi-family residential units. More than 8,500 multi-family units, as well as several million square feet of office and retail space, will arrive near DART stations in the next five to ten years. In light of the recession, financing for projects without multi-family units has been much more difficult to secure. If financing for retail and office projects can rebound, it is likely that strong growth can be felt in these markets.

Introduction

The DART Rail System has expanded considerably since 2007 with significant changes including expansions to the Orange Line into Irving and Las Colinas, the opening of the Green Line running from Carrollton to Southeast Dallas, and the expansion of the Blue Line to Rowlett. In a previous study, we found substantial improved valuations for properties within 0.25 miles of DART Rail stations. In the following, we update our previous research efforts examining the development of properties in close proximity to DART Rail stations. In addition, we expand previous research by examining the impact that proximity to light rail stations has on commercial property rental rates. By exploring the effect on property valuations and lease rates, it is possible to make a case to local developers and governments on the non-transportation related benefits of a light rail system.

The effect of light rail stations on area development has been studied rigorously for more than two decades (Berechman & Paaswell, 1983; Bollinger & Ihlanfeldt, 1997; Cervero & Landis, 1997). In most cases, researchers found a positive association with increased development activity within 0.25 miles or 0.5 miles of a light rail station. However, it appears that the most pronounced effect occurs within the 0.25 mile distance (Weingberger, 2000).

Our assessment addresses the impact of the DART Rail System on development activity occurring near stations. The 17-year old DART Rail System has expanded from only a handful of stations in 1996 to more than 60 in 2013. This report examines both the impacts of past development and future announced projects that are proposed, planned, or underway near DART Rail stations. Additionally, we examine the impact of light rail station proximity on office lease rates within the DART service area. While this analysis focuses on the 0.25 mile area identified in the literature, it is likely that the effects of station proximity spread beyond this arbitrary impact zone.

Methodology

Assessing Existing Development

In order to analyze the effect of DART Rail stations on development activity, we followed the literature and investigated the area within 0.25 miles of each DART Rail station. The first step was to compile parcel data from the appraisal districts of the three counties (Collin, Dallas, and Denton) with light rail stations. Collected data from the 2013 certified tax rolls of each county were attached to a parcel shapefile using ArcGIS. For this analysis, all stations were used with the exception of those in the Dallas Central Business District (CBD). However, we chose to exclude the CBD from our analysis, primarily to mitigate the various factors responsible for growth in the CBD that cannot be easily controlled.

To test the effect of light rail on property development, we compared development in station areas to matching “control” areas of similar size. For example, the control area is generally along a major roadway closest to the rail line at the next major intersection without a DART

station. For a few station areas this proves impractical and required using the closest area with comparable types of development, exhibiting similar market conditions. This is the approach used in our previous studies (see Weinstein and Clower, 1999) that has been vetted and published in the academic literature.

Data for this analysis come from the appropriate county appraisal district including 2013 certified appraised value, year built, state property tax division (SPTD) code, building description, and business name. Once extracted, the data were cleaned in order to only include the types of properties being examined in this analysis.¹ Using the SPTD code, building description, and business name we were able to categorize each parcel into one of five groups: industrial, multi-family residential, single-family residential, office, and retail.² Next, the properties to be assessed were screened by year the improvement was built. We assumed that developers would anticipate the addition of a light rail station by no more than three years. For example, 8th & Corinth Station was part of the original DART Rail System, opening in 1996, and only properties with an improvement built from 1993 onward were included in our analysis. Similarly, the Las Colinas Urban Center Station opened in 2012, so only properties built since 2009 were included for that station.

Future Developmental Impacts

In addition to inventorying previous development, we update the findings of our 2007 study examining the value of projects announced, planned, and under construction that do not yet appear on appraisal district tax rolls. Two different approaches were taken to complete this task. First, using secondary sources such as newspapers, online journals, and various locally- or regionally-oriented websites, we searched for news stories published since 2009 that discuss development occurring near DART Rail stations, with a strong focus on transit-oriented development (TOD) projects. Information from these articles concerning each project was compiled regarding the expected values of each project, acreage, and the amount of space devoted to different land uses. Online searches helped to fill in missing or incomplete data from news stories. In addition, we contacted several individuals with specialized knowledge of local real estate development to help fill in missing information regarding these projects and to help identify projects not covered by the media, or missed in our searches. If no data were available on the value of a project, we selected similar projects (based on retail/office square footage, number of units, and project size) to estimate project values. Our approach was consistently conservative in an attempt to avoid over-valuing a project. In addition, our analysis ignores development that appears to have little to do with proximity to a light rail station, such as a convenience store located at the intersection of two major thoroughfares that happens to be near a DART station.

Our second approach to identifying projects for this component of the analysis was to conduct field observations along the entire DART Rail System. Staff researchers visited each station area to examine on-going development and to look for information regarding any proposed properties. In some instances we were able to observe and catalog previously un-noted

¹ For example, in some cases a medical office located in a converted house would be listed as a single-family property, despite being an office; or exempt properties, such as a church building, would be listed as a retail space.

² At this time, all properties which were exempt, government owned, or DART owned were removed from analysis.

development projects, such as single-family housing under development as part of the Mustang Station development in Farmers Branch, adjacent to the DART Farmers Branch Station.

Lease Rate Analysis

In order to determine the effect of light rail stations on rental rates, 2001 to 2013 average lease rates for properties were extracted from the Xceligent, Inc.,[®] (hereinafter “Xceligent”) CDX database for the Dallas-Fort Worth area. The Xceligent database provides lease rate asking prices for a wide range of commercial properties including office, retail, and special uses (liquor stores, bowling alleys, dry cleaners, etc.).

The data are collected from property owners and brokers using surveys and other data collection techniques, thus there are varying levels of data availability among the different land uses. In order to have a robust sample of property lease rates, this analysis focuses on office properties in analyzing the effect of light rail stations on property rental rates. In keeping with other study elements, we initially focus our attention on office properties located within 0.25 mile of DART Rail stations. The comparison group includes all office properties located in relevant real estate markets as defined by Xceligent (see Figure 1), using the relevant market-area controls for general local market conditions and market trends in the relevant submarkets.

Therefore, our analysis compares average rates for the DART group to average rates for the market areas in which the stations fall. In order to perform this research, only DART Rail stations that were open by 2002 were examined³ since these stations are old enough to provide a larger range of historic lease rates – newer stations do not produce sufficient data for analysis at this time.

³ Victory Station, which opened in 2004, was also included.

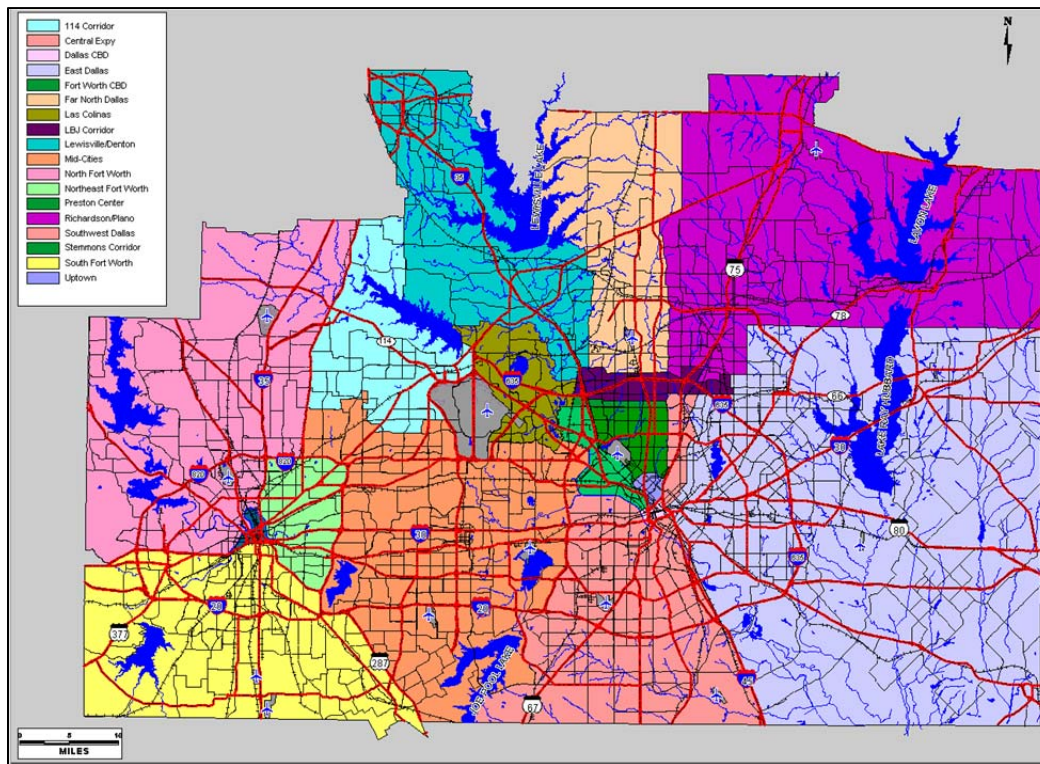


Figure 1. Xceligent Office Space Market Areas for Dallas-Fort Worth, Texas⁴

The Xceligent database reports seven different types of lease rates representing variations in the rental rate coverage of utilities, insurance, taxes, and maintenance of common areas. It is generally not appropriate to compare differing types of lease rates; thus to include a particular rate type in this analysis, there needed to be sufficient cases in the station area and overall market area, as well as consistent examples across the years included in this analysis. Due to shifts in the prevalence of certain types of leases, only properties leased under Plus E (rent plus electricity) rates offered a sufficient number of cases to statistically assess the differences in lease rates for station properties versus the broader market. The data are reported quarterly, which we aggregated into a weighted annual average for this analysis.

Findings

Existing Developmental Impacts

In our assessment of existing projects we found much higher levels of development occurring within 0.25 miles of DART Rail stations than control group properties. New developments occurring within three years of the opening of a given light rail station have valuations totaling almost \$1.5 billion, compared to roughly \$600 million in the control areas – a difference of almost \$932 million (see Table 1). Yearly differences are apparent, with the control areas

⁴ In some cases, the market areas shown in Figure 1 were subdivided into sub-market areas that were used to select the comparable areas.

outpacing DART station areas in property development in only a few instances. Across the board, it appears that developments occurring within 0.25 miles are substantially *more* valuable than those in similar control areas.

We also examined new development by property type. As one could reasonably expect, even though the station-area properties saw more development across land uses, there are notable differences among the development types. Table 2 shows the difference in values occurring between the control areas and the DART station areas in each of the five property types we examined: industrial, multi-family residential, office, retail, and single-family residential.

The largest differentials show that multi-family and office property developments are especially drawn to station areas, which is consistent with transit-oriented development and new urbanism style developments. Additionally, the effects of the recession can be clearly seen starting in 2009, with considerable drop-offs in development across the DART and control groups.

Table 1.
Total Appraised Value of New Property Development

Year	All Development		
	DART	Control	Difference
1993	\$34,383,690	\$15,012,150	\$19,371,540
1994	\$12,082,960	\$19,697,790	-\$7,614,830
1995	\$50,034,090	\$1,545,910	\$48,488,180
1996	\$22,534,270	\$6,184,220	\$16,350,050
1997	\$7,510,360	\$103,242,880	-\$95,732,520
1998	\$99,393,382	\$54,748,515	\$44,644,867
1999	\$123,868,418	\$9,308,230	\$114,560,188
2000	\$76,466,733	\$24,439,534	\$52,027,199
2001	\$37,601,696	\$21,956,076	\$15,645,620
2002	\$61,268,862	\$43,576,656	\$17,692,206
2003	\$121,395,531	\$22,062,269	\$99,333,262
2004	\$22,668,349	\$26,676,048	-\$4,007,699
2005	\$41,294,986	\$29,424,238	\$11,870,748
2006	\$56,795,536	\$37,930,444	\$18,865,092
2007	\$185,641,937	\$16,021,674	\$169,620,263
2008	\$102,254,407	\$48,701,090	\$53,553,317
2009	\$146,265,268	\$24,578,190	\$121,687,078
2010	\$44,493,200	\$44,927,070	-\$433,870
2011	\$180,426,495	\$24,634,030	\$155,792,465
2012	\$107,623,294	\$27,080,460	\$80,542,834
2013	\$161,750	\$0	\$161,750
Total	\$1,534,165,214	\$601,747,474	\$932,417,740

Table 2.
Total Appraised Value of Development by Property Type, between DART and Control Groups

Year	DART Areas					Control Areas				
	Industrial	Multi-Fam	Office	Retail	Single-Fam	Industrial	Multi-Fam	Office	Retail	Single-Fam
1993	-	-	-	\$29,174,230	\$5,209,460	-	-	-	\$14,960,250	\$51,900
1994	\$128,260	-	\$55,410	\$3,456,850	\$8,442,440	-	\$17,884,240	\$313,550	\$1,500,000	-
1995	-	-	-	\$43,838,440	\$6,195,650	-	\$300,770	-	\$745,140	\$500,000
1996	-	-	\$9,536,050	\$9,935,770	\$3,062,450	-	-	\$195,150	\$5,952,990	\$36,080
1997	-	-	E-	\$1,462,900	\$6,047,460	-	\$64,580,370	-	\$35,400,000	\$3,262,510
1998	\$2,798,680	\$64,309,980	\$12,272,098	\$14,427,744	\$5,584,880	-	-	\$1,732,520	\$50,851,105	\$2,164,890
1999	\$4,327,100	\$86,907,280	\$1,229,220	\$19,860,888	\$11,543,930	-	\$3,474,970	\$1,995,840	\$1,828,930	\$2,008,490
2000	\$924,560	\$4,864,410	\$28,568,600	\$30,947,273	\$11,161,890	-	\$291,540	\$7,916,580	\$14,214,974	\$2,016,440
2001	\$312,000	-	\$4,012,297	\$26,190,539	\$7,086,860	-	\$7,944,080	\$152,410	\$8,816,446	\$5,043,140
2002	\$603,680	\$42,000,000	\$1,384,982	\$11,553,730	\$5,726,470	\$13,349,770	\$249,600	-	\$24,366,686	\$5,610,600
2003	\$11,091,930	\$58,708,780	\$2,400,000	\$45,992,181	\$3,202,640	\$4,118,200	-	\$73,670	\$13,217,629	\$4,652,770
2004	-	\$450,000	\$57,900	\$7,877,719	\$14,282,730	-	\$7,431,035	-	\$13,513,993	\$5,731,020
2005	\$86,040	\$18,273,850	\$5,000,000	\$12,721,046	\$5,214,050	-	\$8,699,570	-	\$15,211,728	\$5,512,940
2006	-	\$6,643,180	\$327,190	\$36,420,436	\$13,404,730	\$1,899,040	\$7,288,431	\$380,000	\$22,733,943	\$5,629,030
2007	-	\$147,803,230	\$21,175,219	\$5,376,978	\$11,286,510	-	\$1,080,670	\$2,245,570	\$2,478,634	\$10,216,800
2008	\$1,363,340	\$64,526,010	\$225,000	\$35,258,897	\$881,160	-	\$27,817,520	\$11,843,750	\$7,114,830	\$1,924,990
2009	\$1,630,000	\$29,063,160	\$104,638,878	\$6,219,160	\$4,714,070	-	\$778,620	\$18,000,000	\$2,790,790	\$3,008,780
2010	\$106,530	\$35,828,940	-	\$4,457,440	\$4,100,290	\$114,040	\$4,494,180	-	\$39,120,000	\$1,198,850
2011	-	\$130,395,940	\$26,174,005	\$19,534,780	\$4,321,770	-	\$910,550	\$271,970	\$20,608,550	\$2,842,960
2012	\$100,930	\$61,872,140	\$7,741,800	\$28,417,764	\$9,490,660	-	\$16,329,320	-	\$4,612,920	\$6,138,220
2013	-	-	-	\$161,750	-	-	-	-	-	-
Total	\$23,473,050	\$751,646,900	\$224,798,649	\$393,286,515	\$140,960,100	\$19,481,050	\$169,555,466	\$45,121,010	\$300,039,538	\$67,550,410

Figures 2 through 5 offer a graphical representation of the comparative pace of development near DART Rail stations by land use type. Figure 2 tracks multi-family residential property development by value. Unique in this analysis was the greater number of multi-family properties in control group areas; however the projects were much smaller in scale. Between 1993 and 2013 the data suggest that almost \$580 million more was invested into multi-family residential development near DART Rail stations than in study control areas. We are cautious to note that some multi-family properties in the control area are actually quadplexes and similar low-density properties. Still, it is noteworthy that the most valuable multifamily projects, such as The Phoenix near Mockingbird Station, are station-area developments.

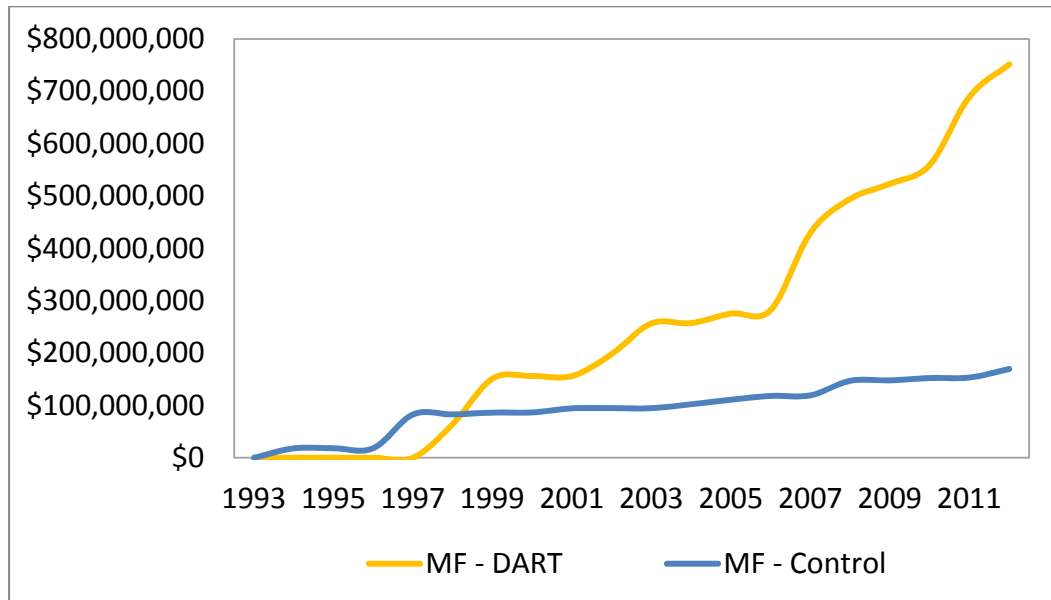


Figure 2. Cumulative Value of Multi-Family Development, 1993-2013

Through 2013, DART station areas have outperformed their matching control areas in terms of office development by a substantial margin. From 1993 to 2013 new office space built near DART stations totaled more than \$224 million, compared to just about \$45 million in control areas. Much of the office development occurring near DART stations are large, highly valuable office buildings that are not only near DART stations but close to highways and major roadways. While the control points fit the same criteria, it appears that locations near DART stations have had an edge in the ability to develop valuable office space since 1993 and especially since 2000. New development occurred in both areas during the recession of 2008-2009, but the DART areas far outpaced the control areas in terms of the value of new development (see Figure 3). The large spike in 2009 was a result of the Texas Oncology Center, a \$100 million medical office development near the Baylor University Medical Center Station.

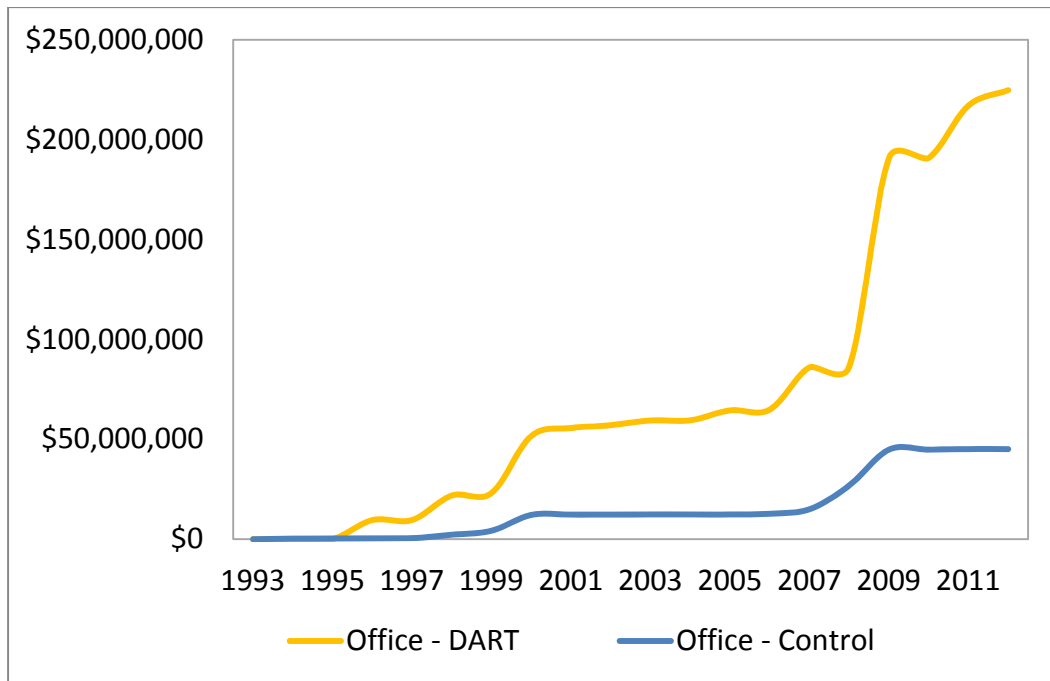


Figure 3. Cumulative Value of Office Development, 1993-2013

The same story can be seen in terms of new retail development. The differences were not as pronounced between the two areas as was found in office properties, but DART stations appear to have stimulated more valuable retail projects than control areas. Steady retail development has occurred in both areas in the last twenty years; however, it appears that development within 0.25 miles of DART Rail stations has been able to maintain a much greater pace than comparable areas (see Figure 4). Large retail developments near Park Lane Station and Mockingbird Station may account for a considerable amount of the \$93 million value differences between the two groups. However, the control group also included areas with large retail developments, so it would appear that the proximity to light rail can lead to more valuable properties, with new retail properties within 0.25 miles of a DART station valued at \$393 million in 2013.

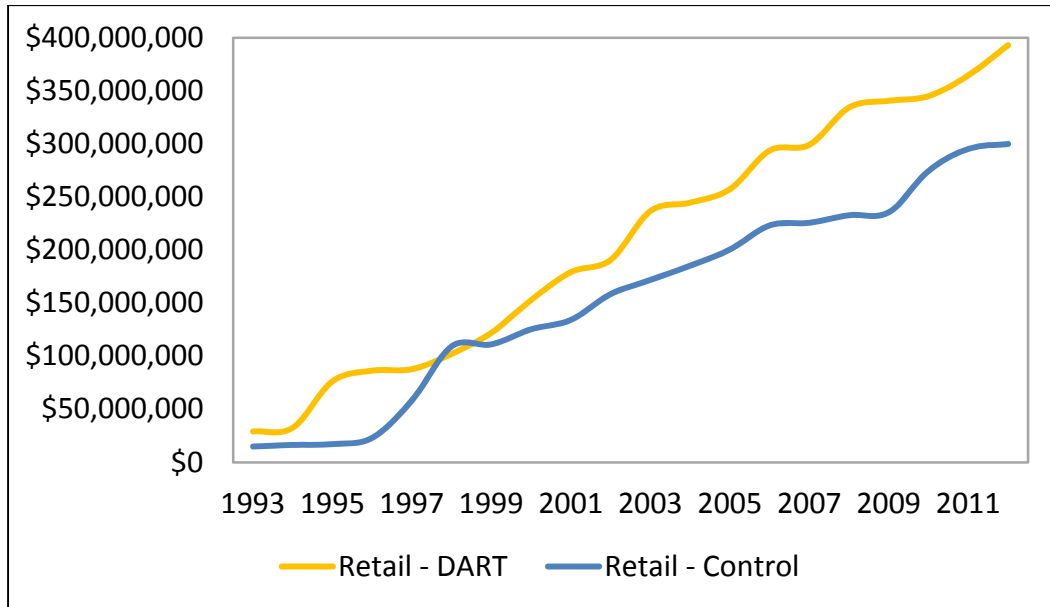


Figure 4. Cumulative Value of Retail Development, 1993-2013

Finally, single-family residential development near DART stations also appears to be more valuable than those in the control areas, although steady development has occurred in each group since 1993. This is somewhat contradictory to expectations. The expected development near rail stations is generally mixed-use retail or multi-family residential; though, the experience along the DART Rail System may be quite different for a variety of reasons.

Primarily, there are a number of stations oriented as park-and-rides, where passengers may park their vehicle before commuting via light rail. In some cases, these stations exist near single-family residential subdivisions (Lake Highlands Station, White Rock Station, Forest Lane Station, etc.).

Additionally, much of the area around stations in the southernmost and easternmost reaches of the DART Rail System are primarily located near single-family houses. In terms of frequency, new homes were being constructed throughout the time period in both the DART and control groups. However, new single-family development in DART station areas is estimated at \$140 million, making it considerably more valuable than new development in control areas appraised at \$67.5 million (see Figure 5).

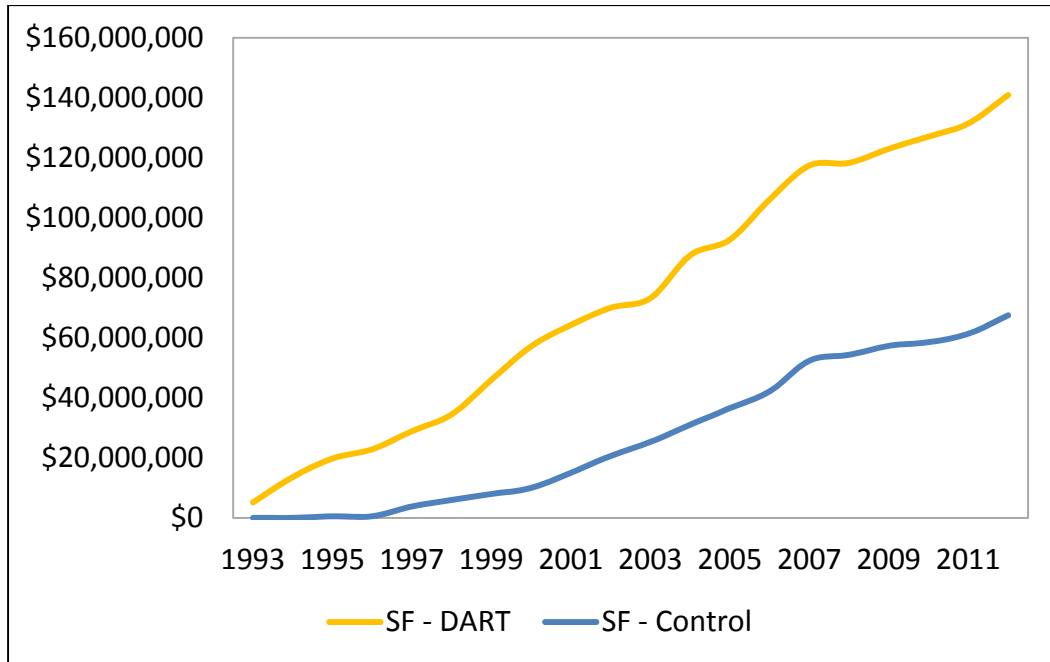


Figure 5. Cumulative Value of Single-Family Development, 1993-2013

Based on the data presented above, we estimated the potential tax revenue generated by these property improvements. Overall, properties near DART stations contributed an estimated \$36 million in taxes to local governments in 2013 compared to \$14 million in the control group areas. In both groups, multi-family housing appears to have provided the largest amount of property tax value – with \$17 million in the DART service area (see Table 3). Retail properties also generated millions of dollars in property tax revenue. These estimates do not include the value of exemptions or incentives that may be tied to individual properties; this is offset by explicitly not including the additional property tax revenue associated with business personal property located within commercial and industrial properties examined in this analysis. DART stations not only stimulate development more than comparable areas in the region, but in 2013 these developments generated over 2.5 times more property tax revenue.

Table 3.
Estimated 2013 Property Values and Tax Contributions

Property Type	Est. Value of All Properties		Est. Tax Contributions		Tax Differential
	DART	Control	DART	Control	
Industrial	\$23,473,050	\$19,481,050	\$556,311	\$461,701	\$94,610
Multi-Family	\$751,646,900	\$169,555,466	\$17,814,032	\$4,018,465	\$13,795,567
Office	\$224,798,649	\$45,121,010	\$5,327,728	\$1,069,368	\$4,258,360
Retail	\$393,286,515	\$300,039,538	\$9,320,890	\$7,110,937	\$2,209,953
Single Family	\$140,960,100	\$67,550,410	\$3,340,754	\$1,600,945	\$1,739,810
Total	\$1,534,165,214	\$601,747,474	\$36,359,716	\$14,261,415	\$22,098,300

Future Developmental Impacts

As discussed in the previous section, properties located near DART Rail stations appear to attract higher levels of property investment. With this in mind, the impacts of DART Rail stations can also be assessed by investigating the types of developments planned or under-construction near DART Rail stations. None of the properties discussed in this section are found in 2013 property tax rolls, although a handful may be completed at the time of this report. In our 2007 analysis we found \$4.9 billion in existing and planned developments. As reasonably expected, not all of the planned developments reported in 2007 came to fruition – some were delayed or canceled due to the financial crisis and subsequent recession, others were re-envisioned, and still others not known in 2007 have been built.

In our current analysis, we identified more than 25 projects located near DART Rail stations that are either under-construction or planned for the coming years. These projects range from the standard TOD-style, mixed-use project to office buildings, multi-family apartment complexes, and single-family homes. These developments are expected to be valued at over \$3.9 billion (in 2013 dollars) and add more than 8,500 multi-family units to DART station areas across the Dallas area. However, in some cases the full value of a development *cannot* be attributed solely to the presence of a DART Rail station. In much the same manner as our 2007 report, we adjusted our estimated values of certain projects that we felt could have been developed in a particular location for reasons other than proximity to a DART Rail station. For example, convenience and neighborhood retail outlets are driven by non-transit related market factors and are not counted in our planned development totals. In other cases, such as an office building under construction near Arapaho Center Station, we judged it more appropriate to only count a portion of the development value towards our assessment of the impacts of proximity to DART Rail services.

After making these market adjustments, we find that \$3.8 billion in developments either planned or under construction can be attributed to the presence of the DART Rail station. Many of these projects are relatively small, between 2 and 5 acres total, but several are well over 30 acres. The Union at Carrollton Square multi-family project, developed by the Trammell Crow Company subsidiary High Street Residential, is one example of a relatively large development occurring near DART Rail (see Figure 6). This project adds roughly 300 multi-family units to the Downtown Carrollton area within 0.25 miles of the DART station, a considerable amount of residential units added to an area previously without that level of new development. Even more units are under construction in the station area but fall outside of our 0.25 mile catchment area.



Figure 6. Trammell Crow Company/High Street Residential's "Union at Carrollton Square" Multi-family Development near Downtown Carrollton Station.

Source: Owen Wilson-Chavez, September 2013

The largest TOD project currently underway will drastically transform the Bush Turnpike Station. KDC is currently developing a 186-acre project that will be the regional office for State Farm Insurance, as well as a large, mixed-use hub with additional office, retail, and entertainment space. This project is currently estimated to be valued at more than \$1.5 billion on its own, with additional development in the area occurring as well. In fact, Raytheon is considering its own office building in the same project area. In its current plans, the State Farm project will feature 300,000 square feet of retail and restaurant space, 1,000 multi-family units, and more than 5 million square feet of office space (see Figure 7).



Figure 7. Rendering of State Farm Development at Bush Turnpike Station

Source: City of Richardson

In order to estimate the tax revenue generated by future development near DART stations, we used an average 2013 tax rate for the three counties served by DART Rail, incorporating hospital districts, school districts, and community college districts. The rate for this calculation is the same as that used above in the Existing Developmental Impacts section. Using this approach, planned properties near DART stations will add an estimated \$91.8 million to annual real property tax revenues for local jurisdictions, if completed at current valuations.⁵ Importantly, this does not include revenue gains from business personal property taxes that would augment the total fiscal impacts of these new developments.

Premium on Office Lease Rates

The properties within 0.25 miles of DART Rail stations were found to have a significant premium over the market-area group. Between 2003 and 2013, the average lease value for the market-area group was \$16.63 per square foot compared to \$18.97 per square foot for the station-area group. Figure 8 shows the trend of the lease rates between the market and control groups. Properties in both groups suffered declines in lease rates resulting from the recession that began in late 2007 and reflect the unusually slow pace of employment recovery. The premium paid for light rail station-area lease rates peaked in 2010 at almost 20% but still remains 14% higher when compared to the market-area group; only in the initial years does the effect appear smaller. On average, there is a 13.9% premium on lease rates for properties within 0.25 miles of a DART Rail station (see Table 4). To some extent, it would appear that it takes some years for the impact of the DART stations to be reflected in advertised lease rates, likely as a result of the terms of existing leases.

⁵ This does not account for any potential reductions in tax payments associated with economic development incentives.

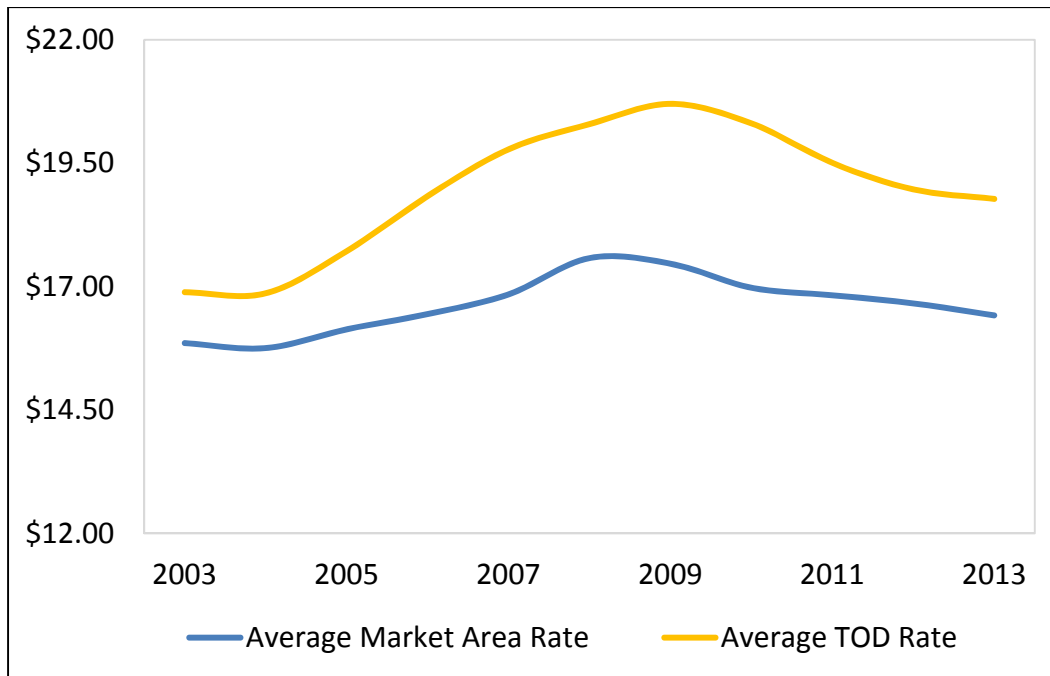


Figure 8. Average Lease Trends, Plus E Leases 2003-2013 (0.25 Mile)

Table 4.
Average Lease Rates and Premiums, 2003 - 2013

Year	Average Market Area Rate	Average Weighted TOD Premium	Weighted Average Premium
2003	\$15.86	\$1.03	6.5%
2004	\$15.76	\$1.11	7.0%
2005	\$16.13	\$1.58	9.8%
2006	\$16.44	\$2.39	14.5%
2007	\$16.84	\$2.94	17.5%
2008	\$17.58	\$2.71	15.4%
2009	\$17.47	\$3.24	18.5%
2010	\$16.98	\$3.33	19.6%
2011	\$16.83	\$2.68	15.9%
2012	\$16.66	\$2.31	13.9%
2013	\$16.42	\$2.36	14.4%

Note: Dollar values are per square foot.

Despite using a market comparison group, it is possible that the differences in lease rates described above may be due to the characteristics of the individual properties. Therefore, we employed a statistical analysis technique to control for key property characteristics. Our analysis covers 454 office buildings for which we have 10 years of quarterly lease-rate data. Our analysis

controls for class of property (A, B, or C), age of structure, and identifier variables for the property being within 0.25 or 0.5 mile of a DART Rail station. The statistical analysis technique used is a robust multivariate regression procedure. The key output of this analysis is the sign of the characteristic's effect (+ or -) and its probability value (p). The probability value is a measure of statistical significance where a value less than or equal to 0.05 indicates significance.

Table 5 reports the findings of this analysis. Our analysis finds evidence that office lease rates are positively impacted when located within 0.25 miles of a DART Rail station. This effect, a \$2.61 premium, appears when controlling for building age and class (Class A and B offices). On the other hand, no statistical association was found on the lease rates of office buildings located between 0.25 and 0.5 miles away from a DART station. Given that the average yearly lease rate, per square foot of office space, within the market areas is approximately \$16.70, office space located within 0.25 miles of a station is expected to command a 15.6% premium over similar offices located at greater distances, which is similar to the findings presented in Table 4.

Table 5.
Regression Analysis of Office Lease Rates

Variables	Marginal Effect	P
Constant	-36.47023	0.0010*
Class A Office	1.52042	0.0001*
Class B Office	1.03960	0.0001*
Year built	0.02577	0.0001*
Located Within 0.25 miles of station	2.61279	0.0001*
Located Within 0.5 miles of station	-0.25237	0.6170

Conclusions

Properties located within 0.25 miles of DART Rail stations appear to be valued at higher rates than those located within the same distance of our control group intersections. The assessed values of multi-family residential, office, and retail properties, in particular, greatly exceed the values of similar properties not associated with a DART Rail station. Large projects at Bush Turnpike and Irving Convention Center stations will create mixed-use, urban districts that drastically alter the current landscapes associated with those two stations. The rapid expansion of multi-family homes near DART Rail stations highlights a strong demand for higher-density urban living in the region, following trends observed at the national level. The benefits of development near light rail stations is not only felt by the individuals who have increasingly used the service, but also by developers who continue to see business opportunities near rail stations, and by local governments that receive increased property tax revenues associated with development.